

CHAPTER 9

SEWING REPAIRS TO CANVAS

9-1. REPAIRING CANVAS

Canvas items are made of duck. Duck is a heavy, closely woven, cotton fabric. It is a sturdy fabric, but like all cotton cloth, it is subject to wear. It weakens with age, washings, and use. Tents and canvas items are mended by fabric repair specialists. Some repairs, such as replacing a rivet, do not require sewing. Repairs which require sewing include darning, patching, remaking buttonholes, and replacing zippers and stovepipe openings.

9-2. DARNING

Darns are used to repair small holes and worn areas in all canvas items except tents. Darns are made by machine or by hand. Machine darning is preferred to hand darning. See the appropriate technical manuals for instructions on how to darn on canvas using a darning machine or a heavy-duty sewing machine. The four kinds of darns used on canvas are circular, zigzag, reinforced, and overedge.

- a. Circular Darn. The circular darn is used to repair small holes and worn areas in canvas that measure less than 1/2 inch across. A circular darn is also used on clothing. The procedures used to make a circular darn are on page 4-1 .
- b. Zigzag Darn. The zigzag darn is used to repair splits and straight tears in canvas where no fabric is missing. It is used to mend holes in clothing, but not in canvas. The directions for zigzag darn are on page 4-3.
- c. Reinforced Darn. The reinforced darn is used to repair holes in canvas that measure 1/4 to 3/4 inch across. The instructions on page 4-5 describe how to make a reinforced darn.
- d. Overedge Darn. The overedge darn (Figure 9-1) is used to repair worn corded seams and bindings. It is not used on clothing. To make an overedge darn--
 - (1) Turn the canvas item faceup.
 - (2) Anchor the thread on the underside by sticking the needle up through the canvas near the cording.
 - (3) Stick the needle back down into the canvas on the other side of the cording.
 - (4) Continue to stitch around the cording in a circular or overhand fashion until the damaged area is covered.
 - (5) Knot the thread on the underside near the cording, and cut the thread close to the knot.

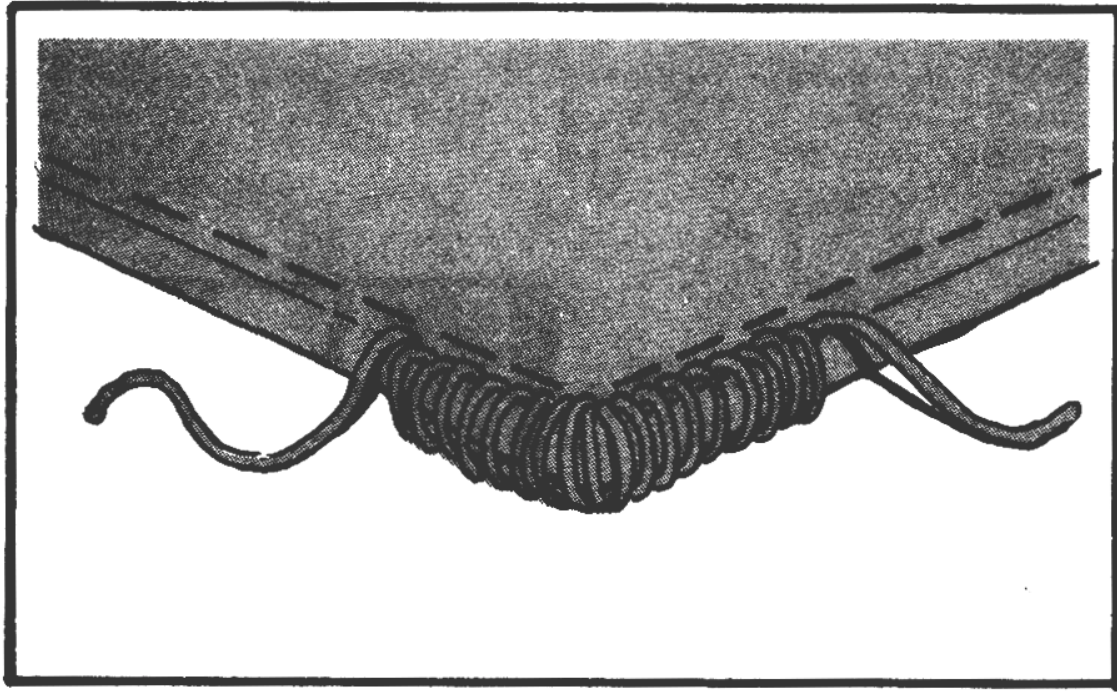


Figure 9-1. Overedge darn

9-3. PATCHING

Patches are used to repair holes and tears in tents. They are used to repair holes and tears that measure more than 3/4 inch across in other canvas items. Patches are used also to repair large worn areas of canvas. Patches are cut from scrapped canvas which is the same color and texture as the canvas to be mended. Items made of waterproof, fire-resistant, and mildew-resistant canvas are patched with canvas that has received the same protective treatment. Several kinds of patches are used to repair canvas. They are described below.

a. Simple Canvas Patch. The simple canvas patch is sewn over or under the damaged area of canvas. The two kinds of simple canvas patches are the top patch and the inverted patch.

(1). Simple Canvas Top Patch. A simple canvas top patch (Figure 9-2) is sewn to the top side of canvas. It is the easiest patch to make and to attach to damaged canvas. To make the simple canvas top patch--

(a) Zigzag darn the edges of a rip or tear together to prevent further damage, if no canvas is missing. If canvas is missing, cut out the damaged area in the shape of a rectangle.

(b) Place the damaged area faceup on a worktable.

(c) Measure the damaged area.

(d) Cut a rectangular patch from matching canvas. Make the patch large enough to extend $2\frac{3}{4}$ inches beyond the damaged area on all four sides.

(e) Place the patch faceup on a worktable.

(f) Draw chalk lines $\frac{3}{4}$ inch from all four raw edges.

(g) Fold under the raw edges on the chalk lines, and crease the folded edges in place with the handle of a pair of shears.

(h) Center the patch faceup on top of the damaged area.

(i) Sew on the patch by stitching a seam $\frac{1}{8}$ inch from the folded edges on all four sides of the patch. Pivot the canvas and patch on the needle at the corners. Sew over the first stitches for at least 1 inch to tack the seam.

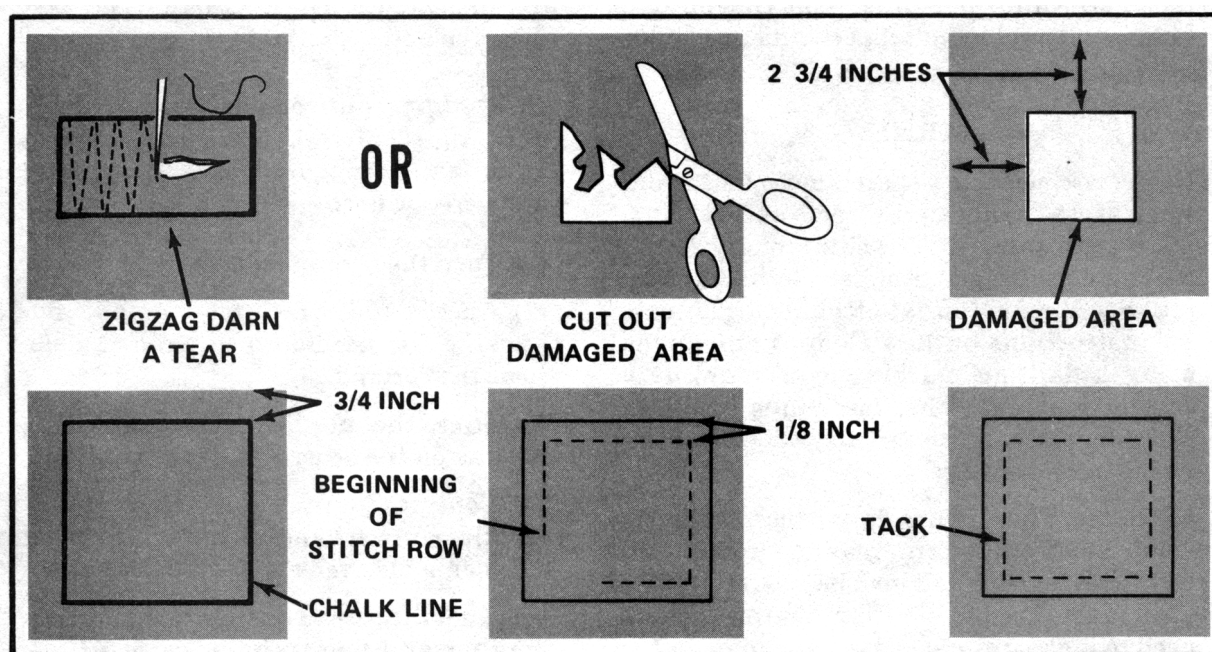


Figure 9-2. Simple canvas top patch

(2) Simple Canvas Inverted Patch. A simple canvas inverted patch (Figure 9-3) is sewn to the inside or the underside of the canvas. To make this patch, follow the directions in the previous paragraph, but center the patch on the underside of the canvas and secure it in place.

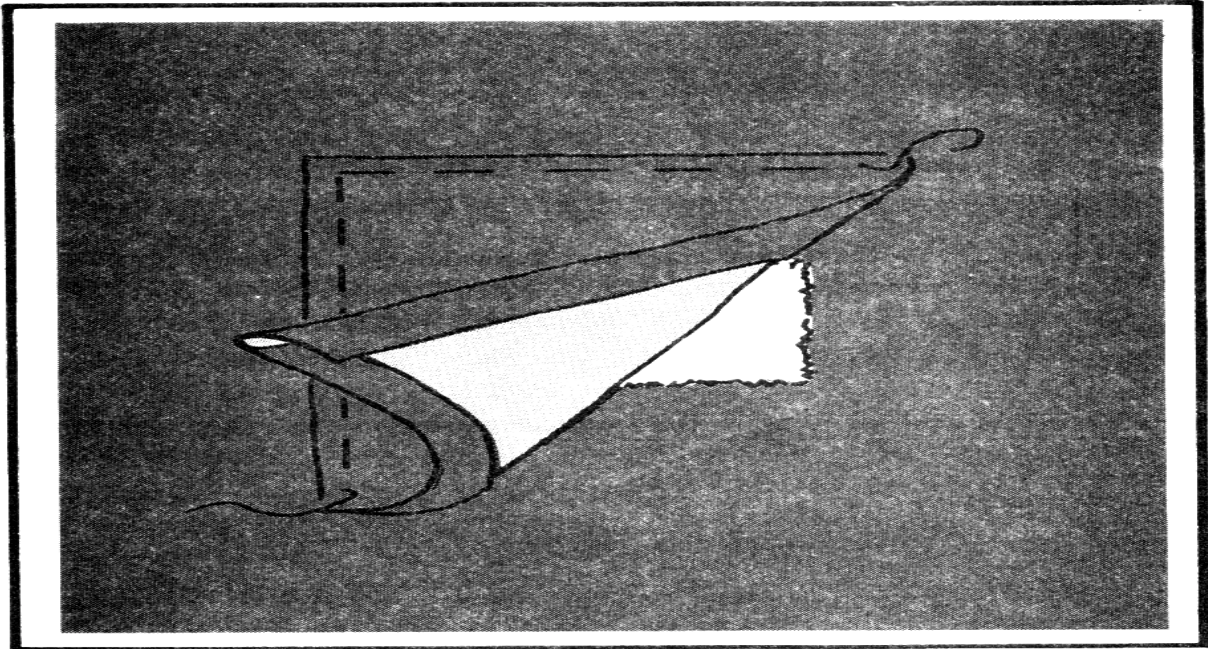


Figure 9-3. Simple canvas inverted patch

b. **Felled Canvas Patch.** The felled canvas patch, like the simple canvas patch, is sewn over or under a damaged area of canvas. Unlike the simple canvas patch, the raw edges of the damaged area are trimmed and neatly finished. The two kinds of felled canvas patches are the top patch and the inverted patch.

(1) **Felled Canvas Top Patch.** The felled canvas top patch (Figure 9-4) is sewn to the top side of canvas. To make a felled canvas top patch--

- (a) Cut out the damaged area in the shape of a rectangle.
- (b) Place the damaged area faceup on a worktable.
- (c) Measure the damaged area.
- (d) Cut a rectangular patch from matching canvas. Make the patch large enough to extend 2 3/4 inches beyond the damaged area on all four sides.
- (e) Place the patch faceup on a worktable.
- (f) Draw chalk lines 3/4 inch from all four raw edges.
- (g) Fold under the raw edges on the chalk lines, and crease the folded edges in place.
- (h) Center the patch faceup on top of the damaged area.

(i) Sew on the patch by stitching a seam $\frac{1}{8}$ inch from the folded edges on all four sides of the patch. Pivot the canvas and patch on the needle at each corner. Sew over the first stitches for at least 1 inch to tack the seam.

(j) On the underside, measure $\frac{1}{2}$ inch from each side of the cutout area, and draw a rectangle with chalk.

(k) Clip each corner of the cutout area diagonally.

(l) Fold under the raw edges $\frac{1}{2}$ inch, and crease the folded edges in place with the handle of a pair of shears.

(m) Stitch a seam around the hole $\frac{1}{8}$ inch from the folded edges. Sew over the first stitches for at least 1 inch to tack the seam.

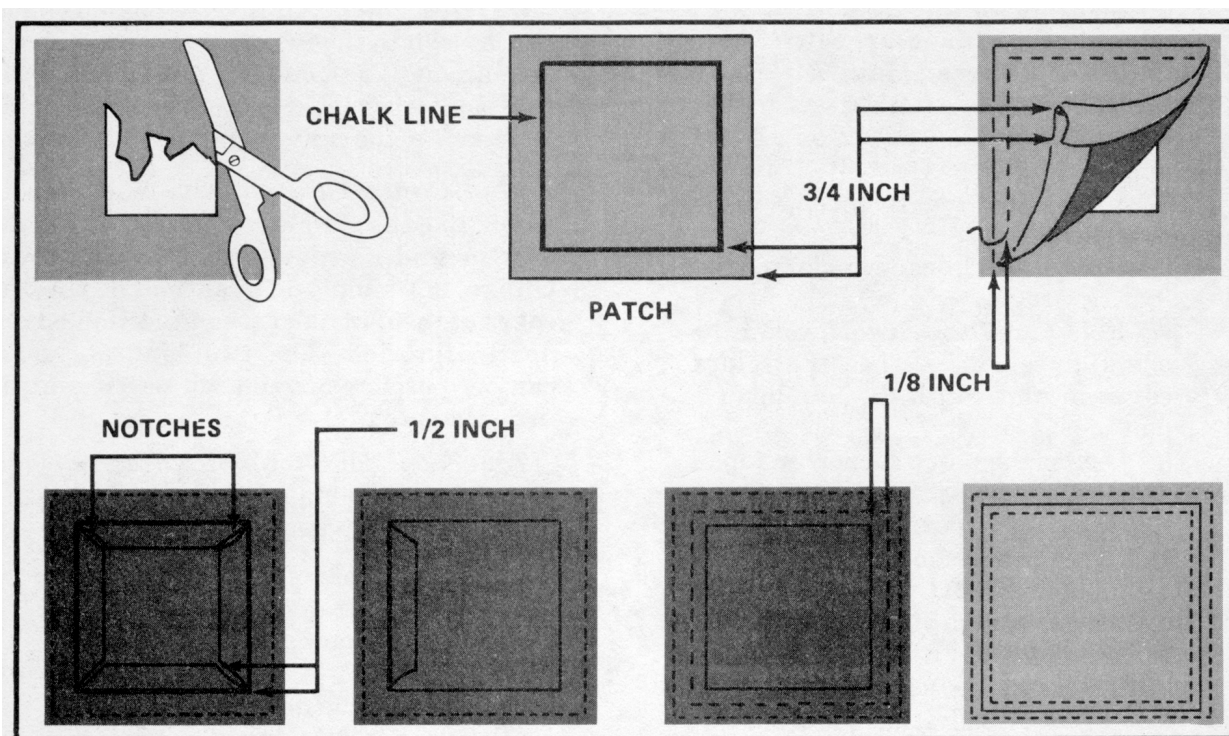


Figure 9-4. Felled canvas top patch

(2) Felled Canvas Inverted Patch. A felled canvas inverted patch (Figure 9-5) is sewn to the inside or the underside of canvas. To make this patch, follow the directions given in the previous paragraph, but center the patch faceup on the damaged area on the underside of the canvas, and secure it in place. Clip the corners on the topside of the canvas, fold the tabs under, and stitch them in place.

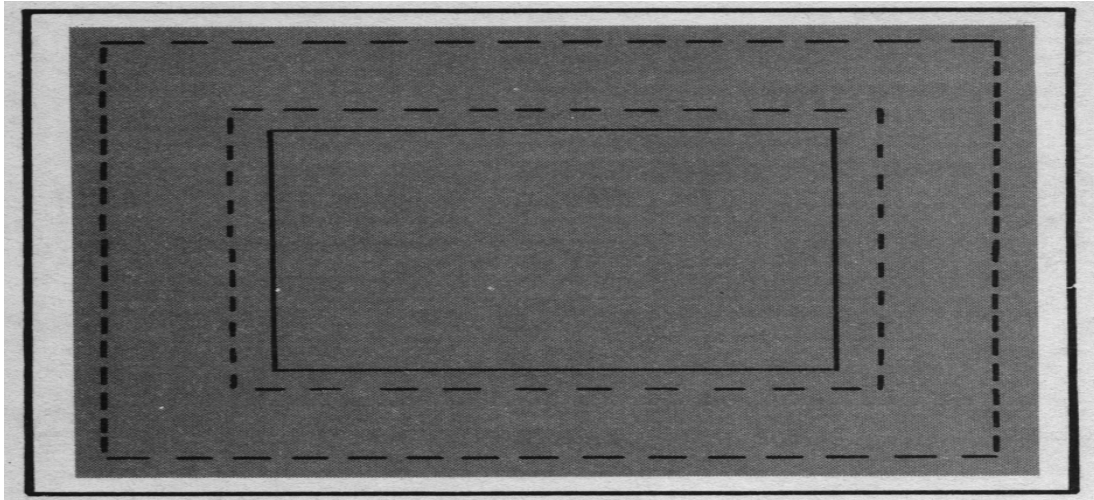


Figure 9-5. Felled canvas inverted patch

c. Watershed Patch. The watershed patch (Figure 9-6) is a five-sided patch used on the outside of tents. The slant of the two top edges allows water to run off so that it does not collect in the top edge seaming. For this reason, the watershed patch lasts longer than a rectangular patch. Using a watershed patch to repair a tent is preferable to using a rectangular patch. However, a rectangular patch can be used under an eave where the top edge is protected. It can also be used to straddle a ridge on a tent where the top and bottom of the patch are slanted toward the ground. To make a watershed patch--

- (1) Measure the damaged area.
- (2) Cut a patch from matching canvas. Make the patch large enough to extend 2 3/4 inches beyond the damaged area on all four sides.
- (3) Fold the patch in half lengthwise. Crease the folded edge with the handle of a pair of shears.
- (4) Unfold the patch.
- (5) Fold the top right-hand corner to the crease in the center.
- (6) Fold the top left hand corner even with the right-hand corner, and crease these folds in place.
- (7) Fold the inside corner of each triangle to the edge of the outside fold. Crease these folds in place.
- (8) Unfold the patch. Cut off the top corners, using the creases closest to the corners as cutting lines.
- (9) Turn the patch faceup.
- (10) Draw chalk lines 3/4 inch from the raw edges.

(11) Fold under the raw edges on the chalk lines, and crease the folded edges in place.

(12) Center the patch on the damaged area so that the two slanted edges at the top of the patch will point upward on an erect tent.

(13) Sew the patch to the tent by stitching a seam $\frac{1}{8}$ inch from the folded edges. Pivot the canvas and the patch on the needle at the corners. Tack the seam by stitching over the first stitches for at least 1 inch.

(14) Sew a second seam $\frac{3}{8}$ to $\frac{1}{2}$ inch inside the first seam. Tack the seam for at least 1 inch.

(15) Cut out the damaged area on the inside of the tent to within $\frac{1}{8}$ inch of the second seam.

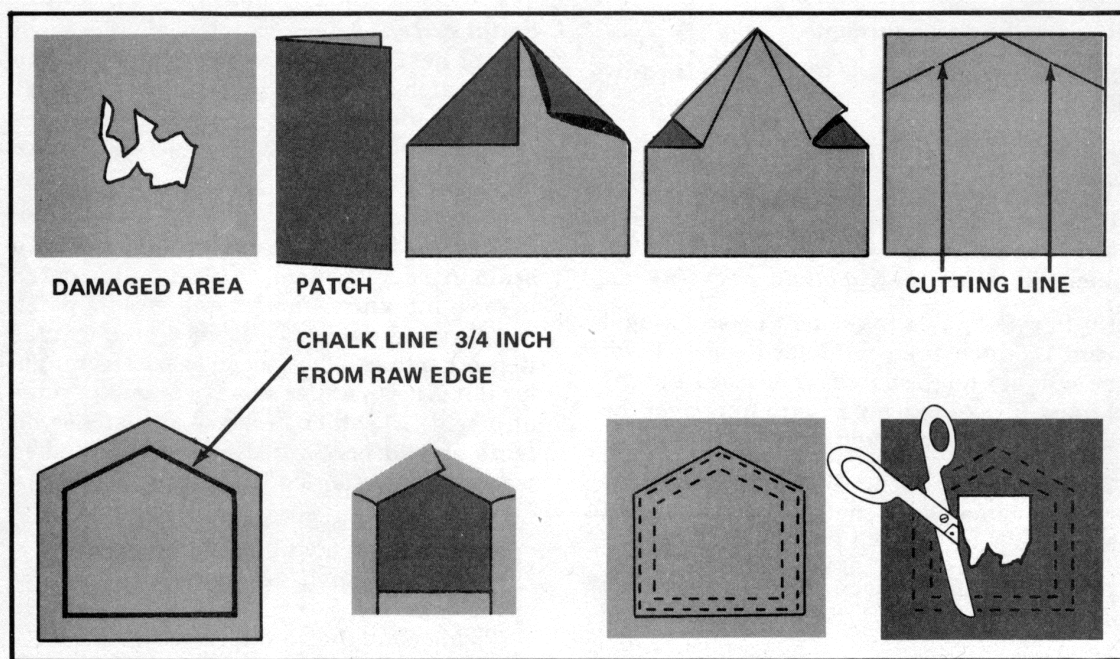


Figure 9-6. Watershed patch

d. Seam Patch. A seam patch is a patch sewn over or next to a seam in a canvas item. The seam patch can be rectangular or slanted at the top so that it sheds water better. There are several kinds of seam patches. They are described below.

(1) Under-Seam Patch. An under-seam patch (Figure 9-7) is used to repair damage near a seam in a canvas item. An under-seam patch can be rectangular if it is used on a canvas item other than a tent. It can also be rectangular if it is sewn under an eave or on the ridge of a tent. All other under-seam patches on tents should be slanted at the top to shed water. To make an under-seam patch--

(a) Open the seam next to the damaged area by cutting through one row of stitches 6 inches above and below the damaged area.

(b) Measure the damaged area.

(c) Cut a rectangular patch large enough to extend inside the open seam on one side and 2 3/4 inches beyond the damage on the other three sides.

(d) Determine which top corner will not be tucked into the seam if the patch should be slanted to shed water. Fold that corner down until it aligns with the side that will be tucked in the seam. Crease the folded edge in place. Fold the corner back to the crease. Crease the second folded edge in place. Unfold the patch. Cut off the top corner, using the top crease as a cutting line.

(e) Place the patch faceup on a worktable.

(f) Draw chalk lines 3/4 inch from the raw edges on three sides. Do not mark on the side that will be tucked into the seam.

(g) Turn under the three edges on the chalk lines, and crease the folded edges in place.

(h) Center the patch faceup over the damage. Position a watershed patch so that the slanted side will be at the top on an erect tent.

(i) Tuck the flat raw edge of the patch into the open seam.

(j) Sew the patch to the tent or canvas item by stitching 1/8 inch from the folded edges on three sides. Tack the seam for at least 1 inch.

(k) Sew the fourth side in place. Close the open seam by stitching a seam 1 inch above the opening to 1 inch below the opening. Tack the seam at each end for at least 1 inch. Use the previous seam line as a stitching guide.

(l) Sew a second seam 3/8 to 1/2 inch inside the first seam. Tack the seam at each end for at least 1 inch.

(m) Cut out the damaged area on the underside to within 1/8 inch of the second seam.

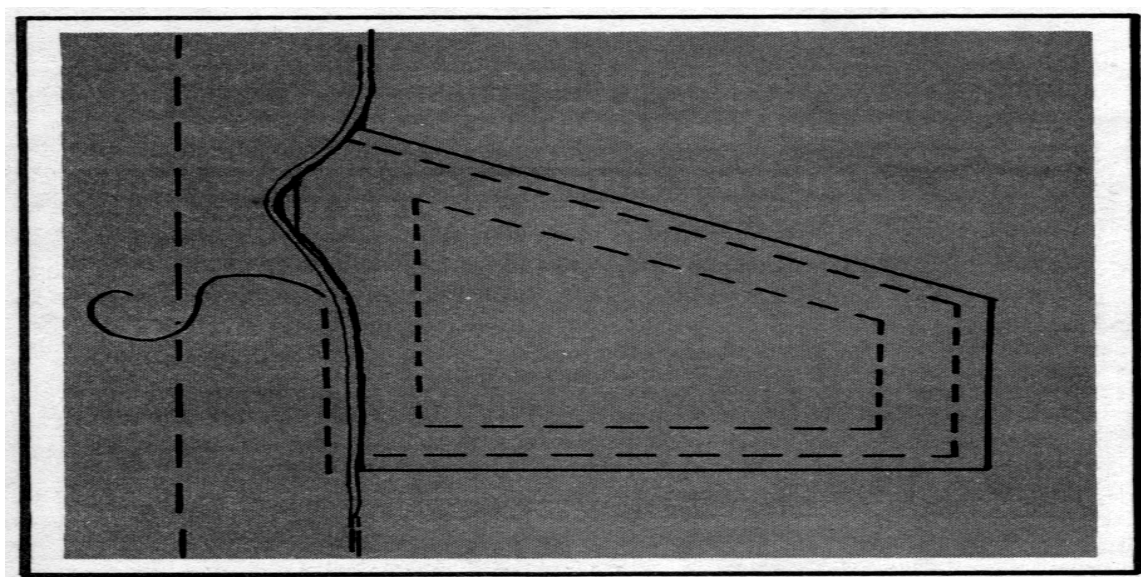


Figure 9-7. Under-seam patch

(2) On-Seam Patch. An on-seam patch (Figure 9-8) is like an under-seam patch in that it is used to repair damage near a seam in a canvas item. It differs from the under-seam patch in that it overlaps the seam. To make an on-seam patch--

(a) Open the seam next to the damaged area by cutting through one row of stitches 6 inches above and below the damage.

(b) Measure the damaged area.

(c) Cut a rectangular patch from matching canvas. Make the patch large enough to overlap the seam on one side and extend 2 3/4 inches beyond the damage on the other three sides.

(d) Determine which corner will not overlap the seam if the patch should be slanted to shed water. Turn that corner down until it aligns with the side that will overlap the seam. Crease the folded edge in place. Fold the corner back to the crease. Crease the second folded edge in place. Unfold the patch. Cut off the top corner, using the top crease as a cutting line.

(e) Place the patch faceup on a worktable.

(f) Draw chalk lines 3/4 inch from the raw edges on three sides. Do not mark on the side that will overlap the seam.

(g) Turn under the edges on the chalk line, and crease the folded edges in place.

(h) Turn the patch facedown.

(i) Tuck the flat raw edge of the patch into the open seam.

(j) Hold the flat raw edge in place so that the patch does not slip out of the open seam. Fold the patch up and over to the opposite side so that the patch is now faceup and centered over the damage.

(k) Sew a seam $\frac{1}{8}$ inch from the folded edge on the three sides that are not overlapping the seam. Tack the seam at each end for at least 1 inch.

(l) Sew a second seam $\frac{3}{8}$ to $\frac{1}{2}$ inch inside the first seam. Tack the seam at each end for at least 1 inch.

(m) Sew the fourth side in place. Close the open seam by stitching a seam 1 inch above the opening to 1 inch below the opening. Use the previous seam line as a stitching guide.

(n) Sew a second seam inside the seam just sewn. Use the previous seam line as a stitching line. Match stitch rows exactly.

(o) Cut out the damaged area on the underside to within $\frac{1}{8}$ inch of the inside seam.

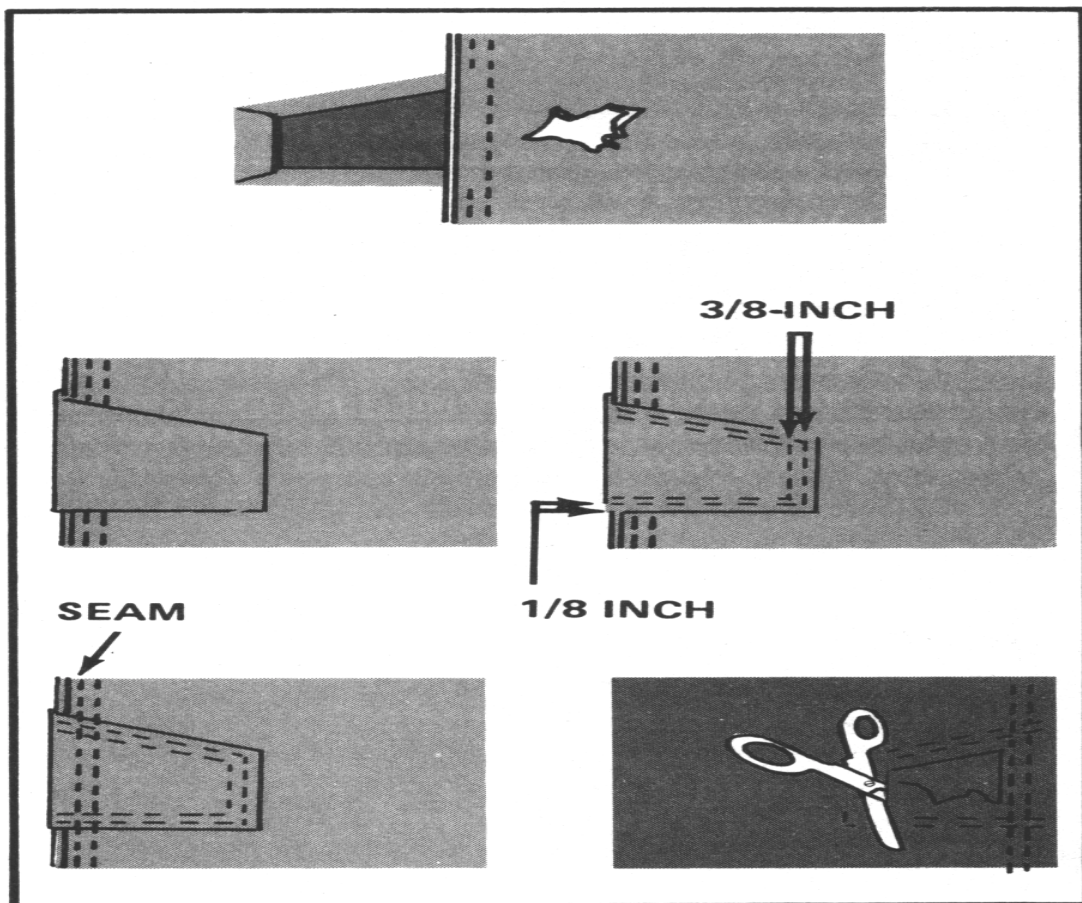


Figure 9-8. On-seam patch

(3) **Over-Seam Watershed Patch.** An over-seam watershed patch (Figure 9-9) is a combination of the slanted under-seam and on-seam patches. It is used on tents when there is damage at a seam. To make an over-seam watershed patch--

(a) Open the seam by cutting through the stitches in both seam lines from 6 inches above the damage to 6 inches below the damage.

(b) Measure the damaged area.

(c) Cut a rectangular patch from matching canvas. Make the patch large enough to extend 2 3/4 inches beyond the damage on all sides. Consider the seam overlap, and add one seam width for a flat seam, two seam widths for a single-felled seam, and three seam widths for a double-felled seam.

(d) Fold the patch in half lengthwise. Crease the folded edge in place.

(e) Unfold the patch, and fold the two top corners to the crease in the center. Crease the folded edges in place.

(f) Fold the corners back to the creases. Crease the second folded edges in place.

(g) Unfold the patch. Cut off the top corners, using the creases closest to the corners as cutting lines.

(h) Turn the patch faceup. Draw chalk lines 3/4 inch from the raw edges.

(i) Fold the raw edges under on the chalk lines, and crease the folded edges in place.

(j) Cut the patch in half, using the crease line in the center as a cutting line.

(k) Place one of the pieces faceup on the damaged area so that the patch will point upward on an erect tent.

(l) Tuck the flat raw edge of the piece into the open seam. Sew this piece to the tent by stitching 1/8 inch from the folded edges on three sides. Sew a second seam 3/8 to 1/2 inch inside the first seam. Tack all seams at each end for at least 1 inch.

(m) Place the other piece facedown on top of the first piece. Tuck the flat raw edge into the seam opening.

(n) Hold the flat raw edge in place so that the piece does not slip out of the open seam. Fold the piece up and over to the opposite side so that it is faceup.

(o) Sew this piece to the tent by stitching 1/8 inch from the folded edges on the three sides. Sew a second seam 3/8 to 1/8 inch inside the first seam. Tack all seams at each end for at least 1 inch.

(p) Close the open seam by sewing two seams from 1 inch above the opening to 1 inch below the opening. Use the original seam lines as stitching guides. Tack the seams at each end.

NOTE: On a double-felled seam, turn the canvas to the opposite side and tuck the raw edge under before sewing the second seam.

(q) Cut out the damaged area on the underside to within 1/8 inch of the inside seam.

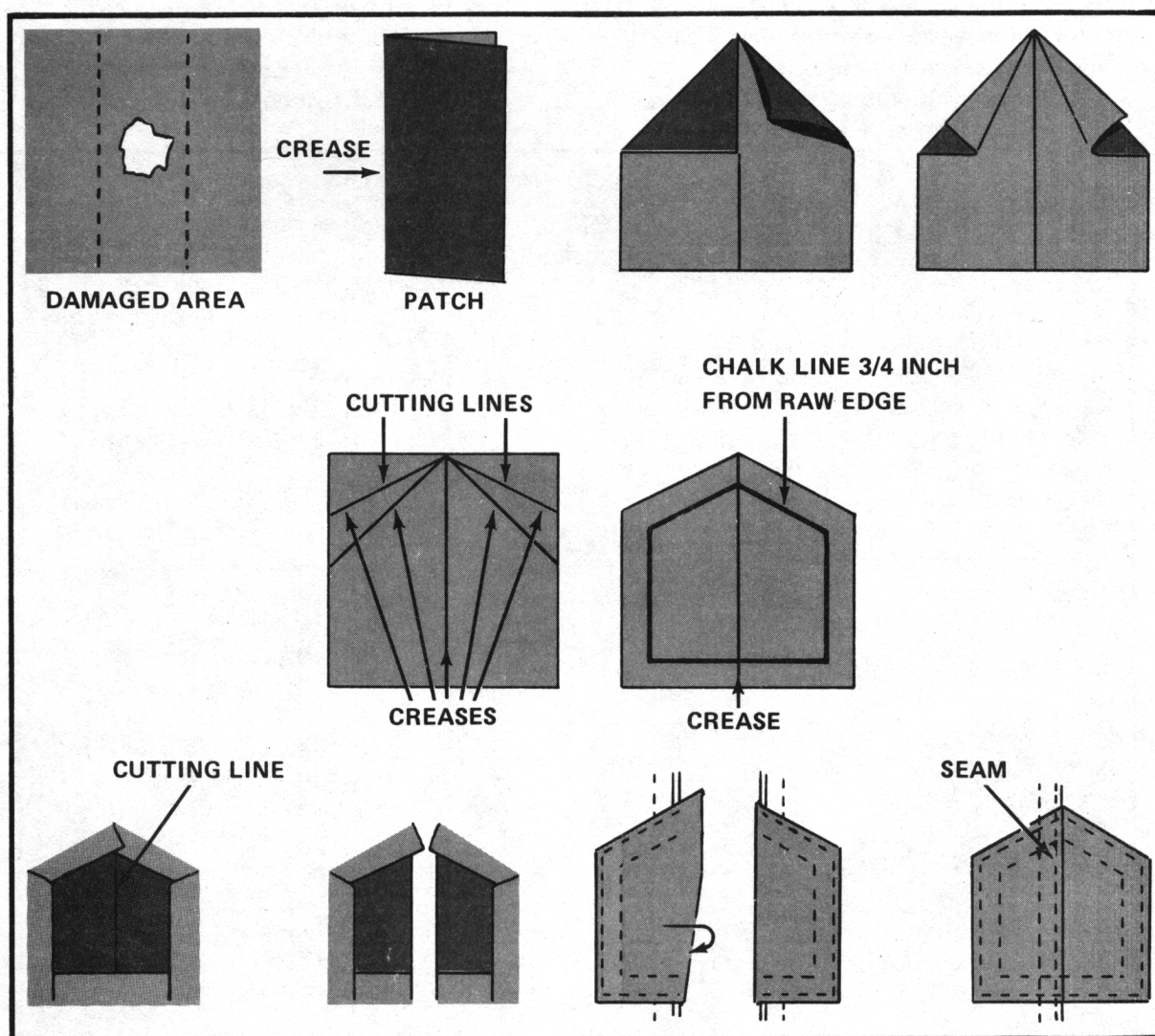


Figure 9-9. Over-seam watershed patch

(4) Seam-to-Seam Patch. A seam-to-seam patch (Figure 9-10) is used to repair damage between two seams. It is sewn in place so that the canvas and patch overlap like the shingles on a roof. This allows water to run off the top and bottom seams of the patch. To make a seam-to-seam patch on a canvas item with doubled-felled seams--

(a) Measure and mark chalk lines from seam to seam 2 inches above and 2 inches below the damage. These chalk lines are cutting lines.

(b) Measure and mark two chalk lines 1/2 inch and 1 1/2 inches above the top cutting line. Measure and mark two chalk lines 1/2 and 1 1/2 inches below the bottom cutting line. These chalk lines are guidelines.

(c) Open the seams on each side of the damage by cutting through the stitches from the top guideline to the bottom guideline.

(d) Cut out the damaged area on the cutting lines.

(e) Measure the cutout area. Cut a patch from matching canvas 3 inches longer and 3 inches wider than the cutout area. (The extra canvas is used in a 1 inch seam overlap and a 1/2-inch turnunder on each of the four sides.)

(f) Turn the patch faceup. Measure and mark chalk lines 1/2 inch from the raw edges on all four sides.

(g) Fold under the raw edge of the patch on the chalk line on the bottom and the raw edge on the side that will overlap the canvas item. Crease the folded edges in place.

(h) Fold up the raw edge of the patch on the chalk line on the top and the raw edge on the side that will be tucked under the canvas item. Crease the folded edge in place.

(i) Fold under the raw edge of the canvas item 1/2 inch at the top of the cutout area. Crease the folded edges in place.

(j) Fold up the raw edge of the canvas item 1/2 inch at the bottom of the cutout area. Crease the folded edge in place.

(k) Tuck the top edge of the patch under the top edge of the cutout area. Overlap the patch by 1 inch, using the top chalk line on the canvas item as a guide.

(l) Center the patch from side to side. Tuck under or overlap the sides of the patch by 1 inch.

(m) Stitch the top edge in place by sewing a seam 1/8 inch from the folded edge of the cutout area.

(n) Sew a second seam 3/8 to 1/2 inch above the first seam.

(o) Overlap the bottom edge of the cutout area 1 inch with the bottom edge of the patch.

(p) Stitch the bottom edge in place by sewing a seam 1/8 inch from the folded edge of the patch.

(q) Sew a second seam 3/8 to 1/2 inch above the first seam.

(r) Stitch each side in place, using the original seam lines as stitching guides. Tack each seam for at least 1 inch at the beginning and the end.

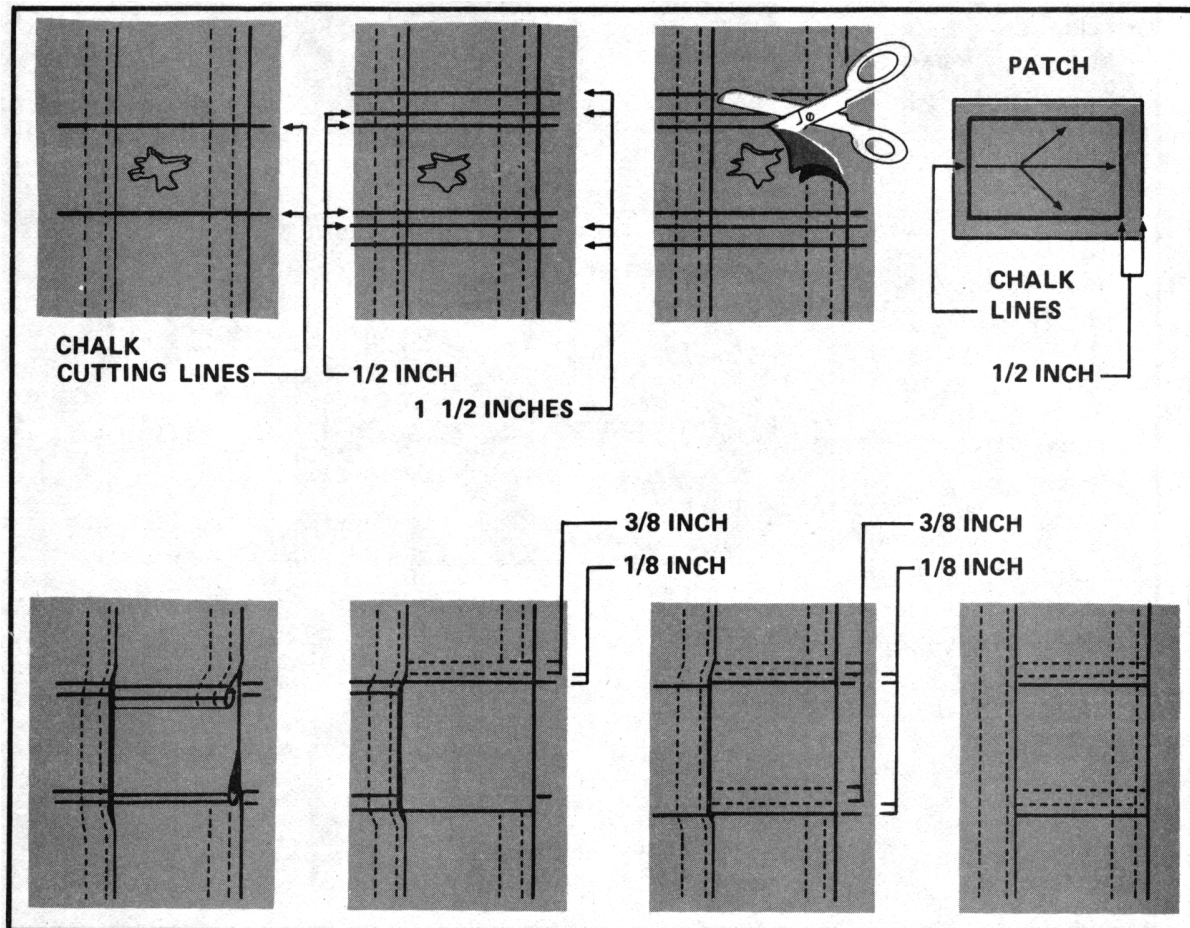


Figure 9-10. Seam-to-seam patch

e. Eave-Edge Patch. An eave-edge patch (Figure 9-11) is used to repair damage on the eave of a tent. It is sewn to both sides of the eave. To make an eave-edge patch--

- (1) Measure the width of the eave.
- (2) Measure the length of the damaged area.
- (3) Cut a patch from matching canvas. Make it four times as wide as the eave. Make it long enough to extend 2 1/2 inches beyond the damage on the left and right sides.
- (4) Turn the patch faceup. Draw chalk lines 1/2 inch from the left and right sides.
- (5) Fold under the left and right raw edges along the chalk lines. Crease the folded edges in place.

patch.

(6) Turn the patch facedown. Measure and mark a horizontal chalk line in the center of the

(7) Draw chalk lines 1/8 inch above and below the center chalk line.

(8) Fold the patch in half on the center chalk line. Crease the folded edge in place.

(9) Fold the top and bottom raw edges toward the center until the edges meet the 1/8-inch chalk lines. Crease the folded edges in place.

(10) Wrap the patch around the eave so that the fold in the center of the patch is on the bottom edge of the eave. Center the patch over the damage.

(11) Stitch the patch in place by sewing a seam 1/8 inch from the folded edges on the top half of the patch. Stitch through all layers. Tack the seam for at least 1 inch by sewing over the first stitches.

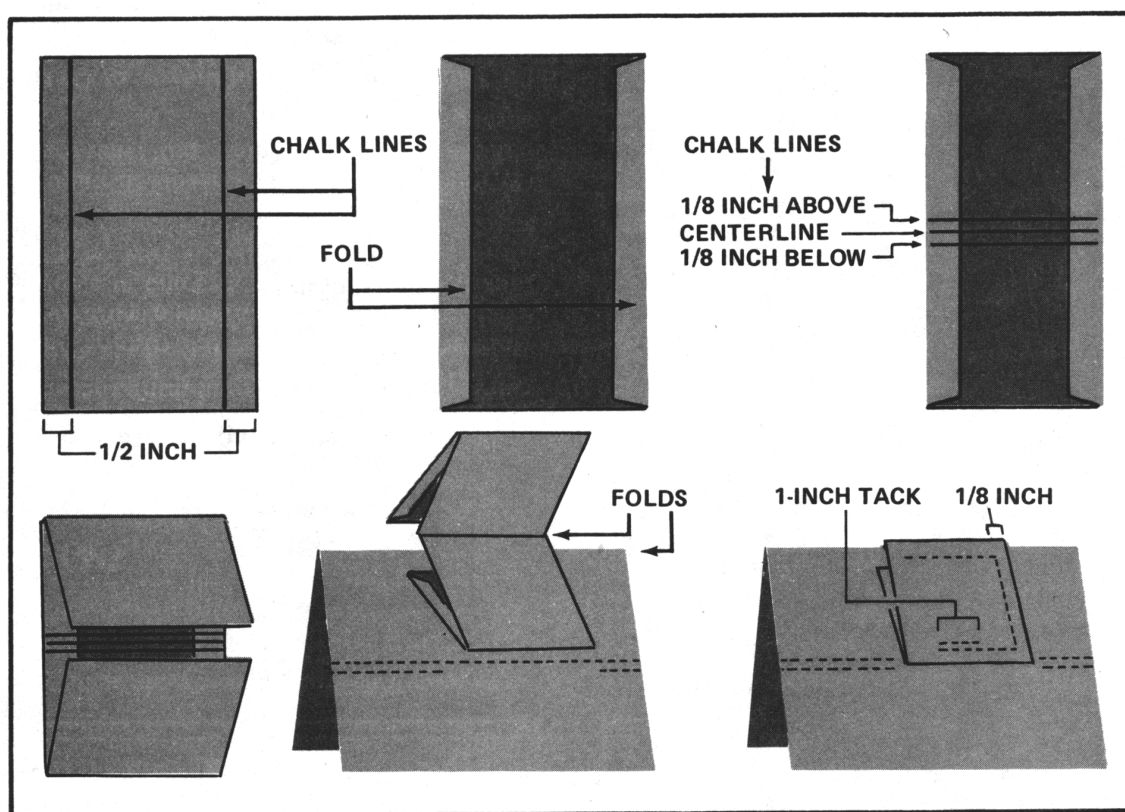


Figure 9-11. Eave-edge patch

f. Tarpaulin Patch. A tarpaulin patch (Figure 9-12) is used to repair protective canvas covers. The patch is triangular so that it can shed water easily when the tarpaulin is draped over objects. To make a tarpaulin patch--

- (1) Measure the damage.
- (2) Cut a three-sided patch from matching canvas. Make the patch large enough to extend $2\frac{3}{4}$ to $3\frac{3}{4}$ inches beyond the damage on all three sides.
- (3) Turn the patch faceup. Draw chalk lines $\frac{3}{4}$ inch from the raw edges on all three sides.
- (4) Turn under the raw edges on the chalk lines, and crease the folded edges in place. (If the damage is near a seam, tuck one side of the patch into the seam.)
- (5) Stitch the patch in place by sewing a seam around the three sides $\frac{1}{8}$ inch from the folded edges. Tack the seam for at least 1 inch.

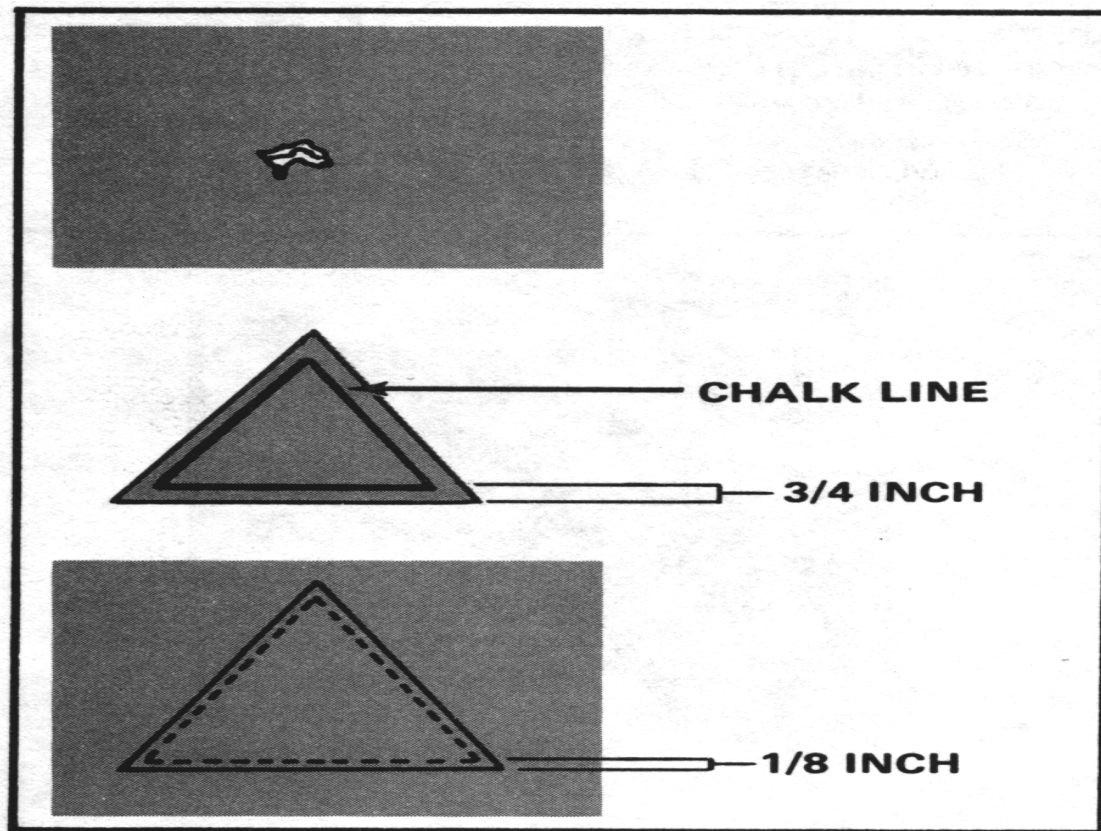


Figure 9-12. Tarpaulin patch

g. Strap-Support Patch. A strap-support patch is used to repair a damaged area where a strap was attached. The patch is made from salvaged canvas with a strap attached. The two kinds of strap-support patches are single-thickness and double-thickness.

(1). Single-thickness. The single-thickness patch (Figure 9-13) is made of one layer of canvas. It is used when the strain on the strap is slight and there is little chance of the patch being pulled loose. To make a single-thickness patch--

- (a) Cut out the damaged area.
- (b) Measure the cutout area.
- (c) Cut a patch from salvaged canvas with a strap attached. Make the patch large enough to extend 2 3/4 inches beyond the cutout area on all sides.
- (d) Turn the patch faceup. Measure and mark a chalk line 3/4 inch from the raw edges on all sides.
- (e) Turn up the raw edges along the chalk lines, and crease the folded edges in place.
- (f) Turn the canvas item facedown.
- (g) Draw chalk lines 1/2 inch from the raw edges on all sides of the cutout area.
- (h) Notch each corner to the chalk line.
- (i) Turn up the raw edges along the chalk line, and crease the folded edges in place.
- (j) Turn the canvas item faceup.
- (k) Center the patch faceup under the cutout area.
- (l) Stitch a seam around the cutout area 1/8 inch from the folded edges on all sides. Tack the seam for at least 1 inch.
- (m) Turn the canvas item facedown. Stitch a seam around the patch 1/8 inch from the folded edges on all sides. Tack the seam for at least 1 inch.

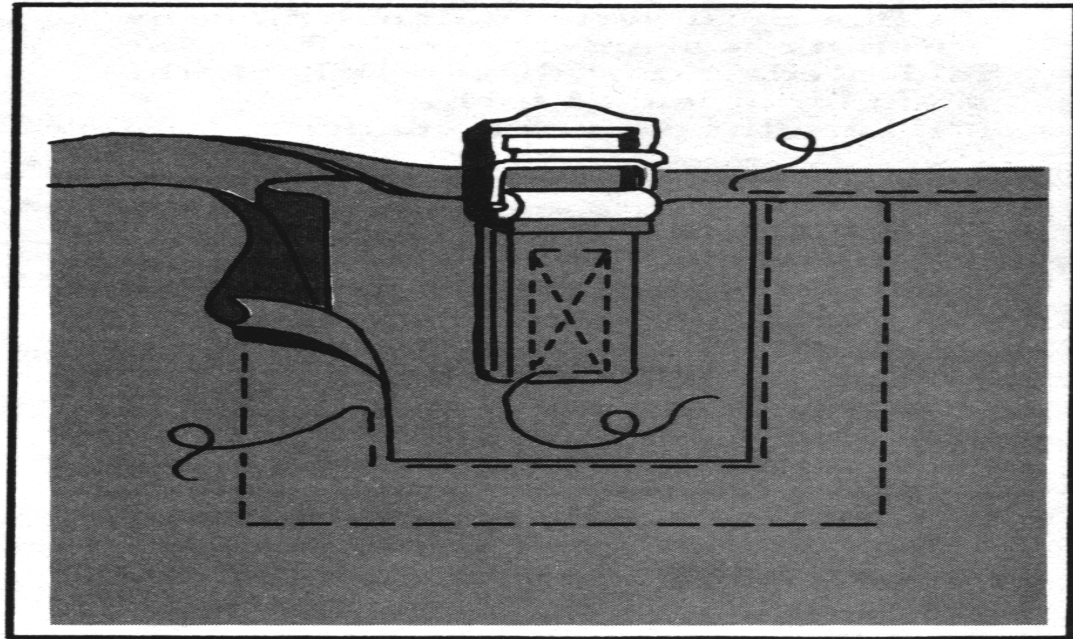


Figure 9-13. Single-thickness patch

(2) Double-Thickness. A double-thickness patch (Figure 9-14) consists of a top patch and an inverted patch. It is used when a strap gets a lot of strain and an extra layer of canvas is needed to give strength to the repair. To make a double-thickness patch--

- (a) Measure the damage.
- (b) Cut a top patch with a strap attached and an inverted patch from salvaged matching canvas. Make the patches large enough to extend 2 3/4 inches beyond the damage on all sides.
- (c) Turn the patches faceup. Draw chalk lines 3/4 inch from all raw edges on both patches.
- (d) Turn under all raw edges on the patches along the chalk lines. Crease the folded edges in place.
- (e) Turn the damaged canvas item over, and center the inverted patch over the damage.
- (f) Sew the inverted patch in place by stitching a seam 1/8 inch from the folded edges on all sides. Tack the seam for at least 1 inch.
- (g) Turn the canvas item faceup, and cut out the damaged area to within 1/8 inch of the stitch line.

(h) Center the top patch on top of the cutout area. Align the top patch with the inverted patch.

(i) Sew the top patch in place by stitching a seam 1/8 inch from the folded edges on all sides. Tack the seam for at least 1 inch.

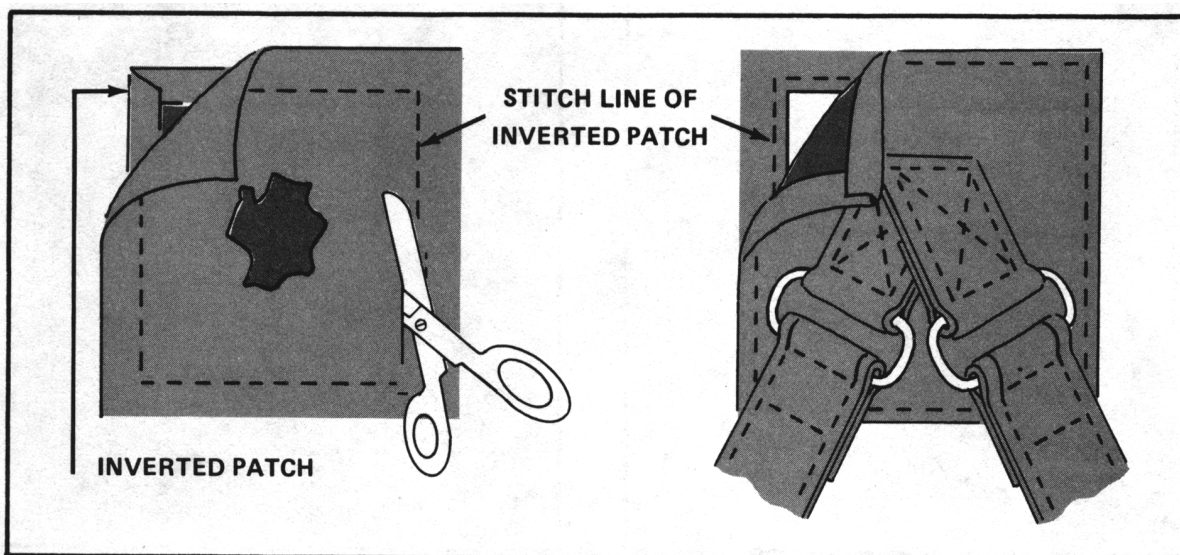


Figure 9-14. Double-thickness patch

h. Grommet Patch. A grommet patch is used to repair the canvas where a grommet has been torn loose. The two kinds of grommet patches are overedge and reinforced.

(1). Overedge Grommet Patch. An overedge grommet patch (Figure 9-15) is used to repair the damage when a grommet near an edge has been torn loose. There are two ways to make the repair. If the grommet were located on an eave or bottom edge, use an eave-edge patch to repair the damage. After the canvas has been repaired, insert a grommet. If the grommet were located in an area other than an eave or a bottom edge--

- (a) Measure the damaged area.
- (b) Cut a patch from matching canvas. Make it large enough to fold over and cover the damage on the top side and the underside. Make it large enough to extend 2 3/4 inches beyond the damage on all sides.
- (c) Turn the patch faceup.
- (d) Draw chalk lines 3/4 inch from the raw edges on all sides.
- (e) Fold under the raw edges along the chalk lines. Crease the folded edges in place.
- (f) Fold the patch in half, and lap it over the edge of the damaged canvas.

(g) Sew the patch in place by stitching a seam around the patch 1/8 inch from the folded edges. Sew through all layers. Tack the seam for at least 1 inch.

(h) Insert a grommet. (If canvas with a row of grommets was damaged, replace the entire section with one patch and a row of new grommets.)

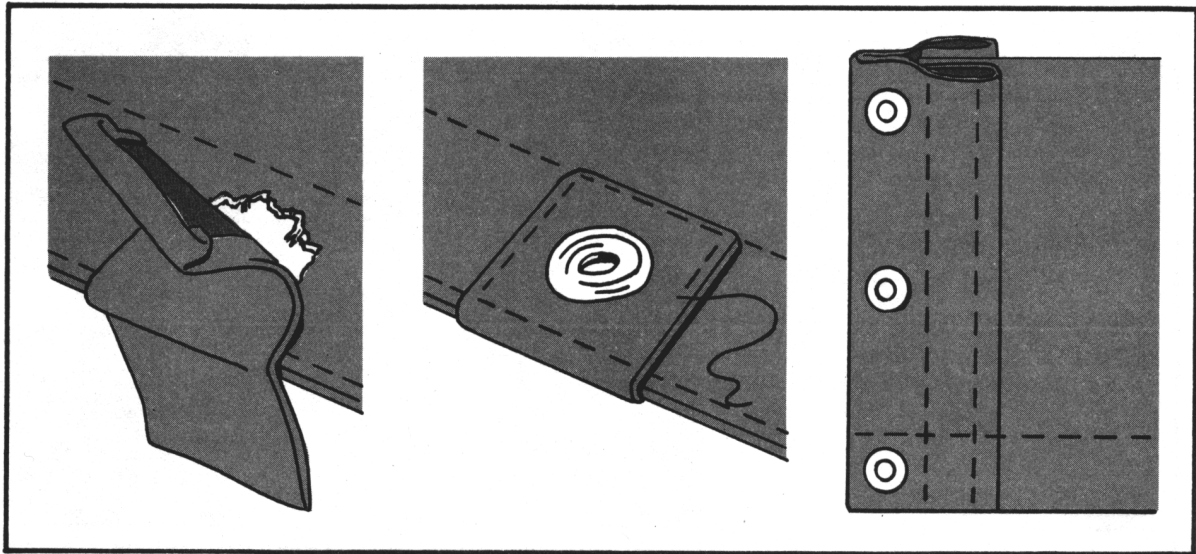


Figure 9-15. Overedge grommet patches

(2) Reinforced Grommet Patch. A reinforced grommet patch (Figure 9-16) is used to repair the damage when a grommet near a corner has been torn loose. The patch consists of two patches and a canvas reinforcement. The three layers of canvas give strength to the repair. To make a reinforced grommet patch--

- (a) Cut out the damaged corner.
- (b) Measure the length and width of the cutout area.
- (c) Cut one piece of canvas for reinforcement the same size as the cutout area. Set it aside.
- (d) Cut two patches from matching canvas, but make them 4 inches wider and 2 inches longer than the cutout area.
- (e) Turn the patches faceup. Measure and mark chalk lines 1/2 inch from all raw edges on both patches.
- (f) Fold under all raw edges along the chalk lines on both patches. Crease the folded edges in place.
- (g) Turn the canvas item facedown. Place one patch faceup on top of the missing corner. Align the edges exactly.

(h) Sew the patch to the canvas item by stitching 1/8 inch from the folded edges on two sides of the patch.

(i) Turn the canvas item faceup. Set the piece of canvas reinforcement in the cutout area on top of the patched corner. Align the edges with the folded edges of the patch.

(j) Place the other patch faceup on top of the reinforcement piece of canvas. Align all folded edges of the patches.

(k) Sew the patch in place by stitching a seam 1/8 inch from the folded edges on all four sides. Tack the seam for at least 1 inch.

(l) Insert a grommet.

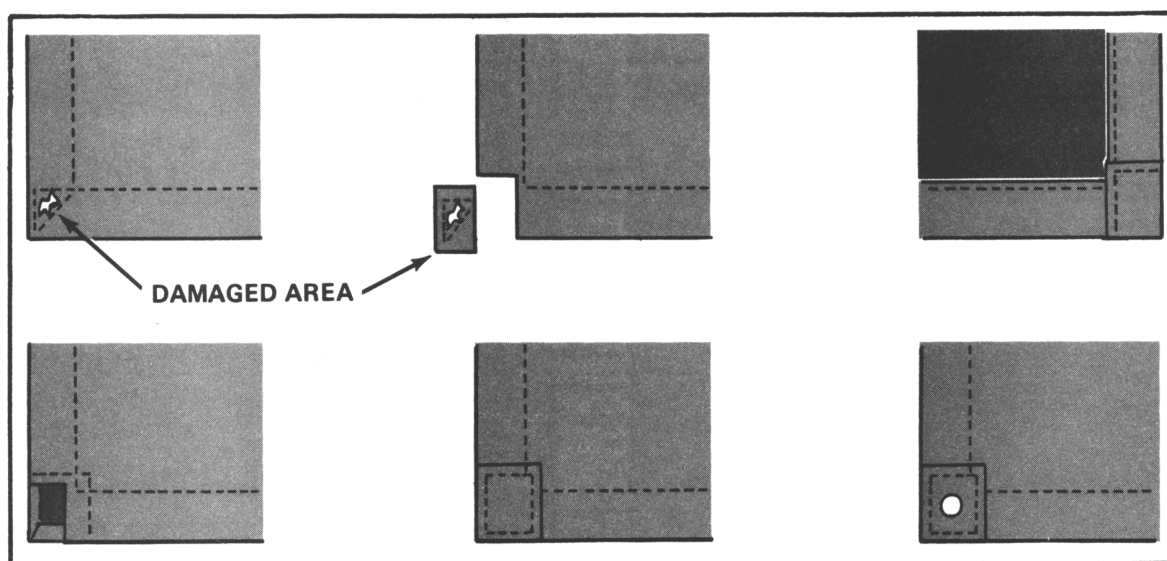


Figure 9-16. Reinforced grommet patch

9-4. REPLACING STOVEPIPE OPENINGS

A stovepipe opening is an outlet on the roof of a tent. The opening can be damaged a great deal by sparks and heat. Instead of scrapping the entire tent, replace the damaged opening with an opening salvaged from another tent. If no salvaged opening is available, fabric repair specialists can make a new one out of canvas. To replace a stovepipe opening (Figure 9-17)--

- a. Draw chalk lines from seam to seam 2 inches above and below the stovepipe stitching.
- b. Open the panel seams on each side of the stovepipe opening.
- c. Cut out the damaged stovepipe opening along the chalk lines.
- d. Cut a replacement panel from a piece of matching canvas. Make it large enough to extend 1 1/2 inches beyond the edges of the cutout area on all four sides.

e. Measure the width and length of the reinforcement piece on the damaged opening. Cut a replacement piece from matching canvas. Make the piece 1 inch wider and 2 inches longer than the reinforcement piece.

f. Turn the reinforcement piece faceup. Mark an outline of the stovepipe opening on the reinforcement piece. Draw it the same size and in the same place as the original stovepipe opening.

g. Turn the replacement panel faceup. Center the reinforcement piece faceup on top of the replacement panel.

h. Sew the two pieces together by stitching a seam around the outline of the stovepipe opening.

i. Make an opening for the stovepipe by cutting a hole through both pieces within 1/8 inch of the chalk line.

j. Tuck all four corners of the reinforcement piece into the hole, and pull the canvas through to the other side.

k. Turn both pieces so that they are facedown. Flatten out the two pieces, and stitch around the opening 1/8 inch from the edge. Tack the seam at least 1 inch.

l. Fold under the raw edges of the reinforcement piece 1/2 inch on all four sides.

m. Stitch around the reinforcement piece by sewing a seam 1/8 inch from the folded edges. Tack the seam at least 1 inch.

n. Turn the two pieces faceup.

o. Make replacement flaps with ties. Make them the same type and size as the flaps on the original stovepipe opening.

p. Stitch the right flap in place.

q. Stitch the left flap in place.

r. Stitch the top flap in place.

s. Sew the new opening to the tent. Stitch it in place the same way a seam-to-seam patch is sewn in place.

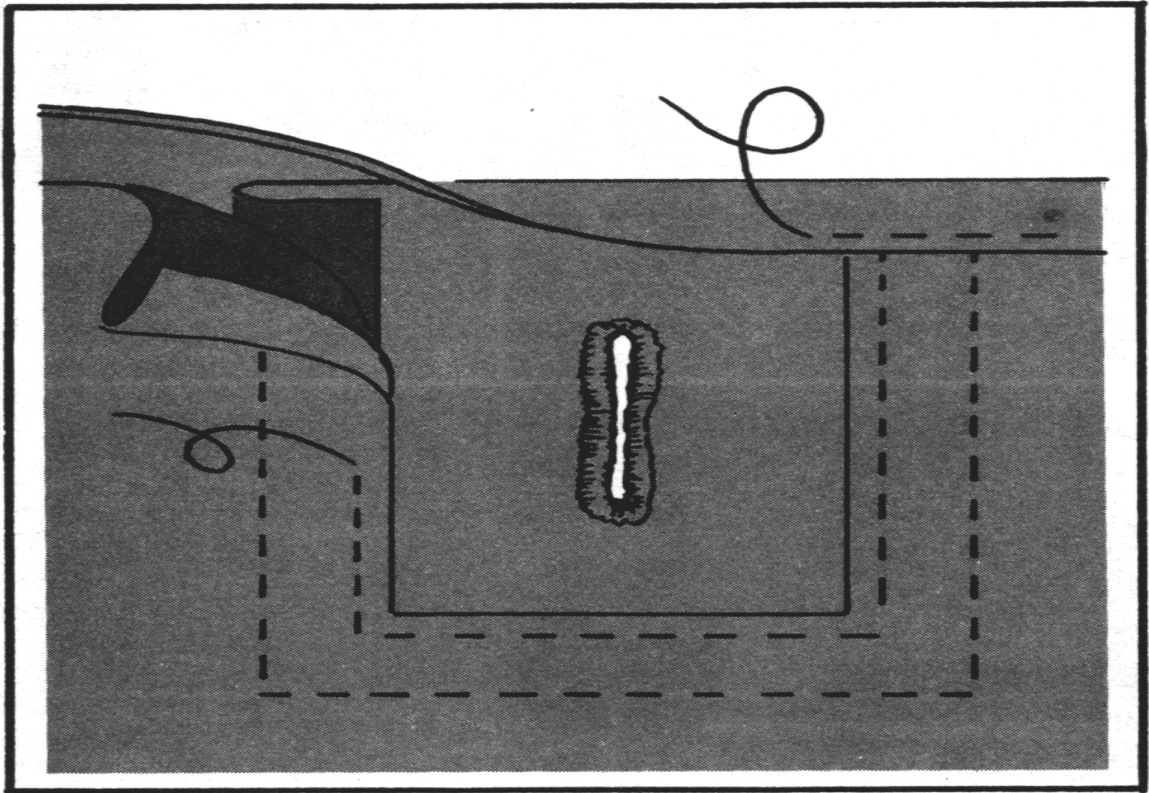


Figure 9-18. Felled patch method

b. Backing Method. To replace a buttonhole using the backing method (Figure 9-19)--

(1) Cut a strip of matching canvas wide enough to cover the damaged buttonhole and extend from the edge of the opening to 1 inch beyond the buttonhole. Allow 1/2 inch on each side for a turnunder. Make the strip long enough to cover all the damaged buttonholes and extend 1 1/2 inches above and below the buttonholes.

(2) Turn the strip of canvas faceup.

(3) Draw chalk lines 1/2 inch from the raw edges on all sides.

(4) Turn the raw edges under on the chalk lines, and crease the folded edges in place with the handle of a pair of shears.

(5) Turn the canvas item facedown.

(6) Cover the damaged buttonholes with the canvas strip.

(7) Stitch the strip to the canvas item by sewing a seam 1/8 inch from the folded edges on all sides.

(8) Rework the buttonholes. Make slits for the buttonholes in the same place as the previous buttonholes. Reinforce the edges by stitching around the slits using the buttonhole stitch. Stitch through all layers.

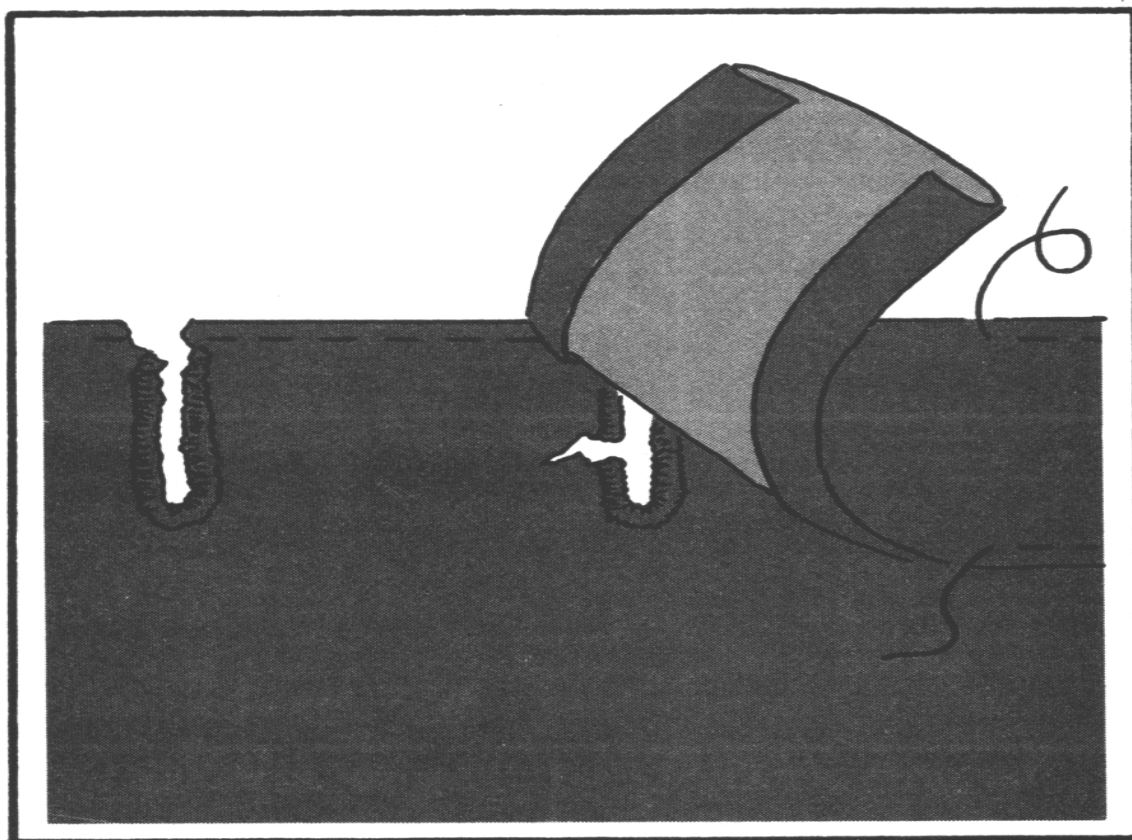


Figure 9-19. Backing method

c. New Facing and Backing Method. To make a buttonhole using the new facing and backing method--

- (1) Cut away the damaged area.
- (2) Draw chalk lines 1 inch from the raw edges.
- (3) Cut a new facing and a new backing from matching canvas. Make both the facing and the backing large enough to extend 1/2 inch beyond the cutout area on three sides and 1 1/2 inches on the side that will be attached to the canvas item or tent.
- (4) Turn the facing and the backing faceup. Draw chalk lines 1/2 inch from the raw edges on all sides.
- (5) Turn under the raw edges along the chalk lines, and crease the folded edges in place with the handle of a pair of shears.
- (6) Turn the backing facedown.

(7) Place the edge of the canvas item or tent faceup on top of the backing so that the edge overlaps the backing by 1 inch. Use the chalk lines on the canvas item or tent as guidelines.

(8) Place the facing faceup on top of the backing. Align all folded edges.

(9) Sew the facing and the backing to the canvas item or tent by stitching a seam around all four sides 1/8 inch from the folded edges.

(10) Make new buttonholes by cutting slits in the facing and the backing in the same places as the previous buttonholes and reinforcing the raw edges with the buttonhole stitch.

9-6. REPLACING ZIPPERS

Damaged zippers are removed, and new or salvaged zippers are sewn in place the same way the original zipper was sewn in place. To replace the zipper of a general-purpose medium or large tent--

- a. Obtain a new or salvaged zipper the same color and length as the damaged one. Remember that a zipper is called a slide fastener in supply catalogs.
- b. Turn the tent inside out. Position the section with the damaged zipper facedown on a worktable.
- c. Place the new zipper facedown on top of the damaged zipper.
- d. Draw several horizontal chalk marks on each side of the new zipper (Figure 9-20). Draw the lines across the zipper tapes and the canvas in the tent. Use these index marks as guides to position the new zipper.
- e. Cut and remove the stitches holding the damaged zipper in place. Clean away all the loose threads.
- f. Unzip the new or salvaged zipper.
- g. Align the chalk marks on one side of the zipper with the chalk marks on the tent.
- h. Fold under the zipper tape 1/2 inch the length of the zipper.
- i. Tack the beginning of the seam.
- j. Sew a seam 3/16 inch from the folded edge of the zipper (Figure 9-21). Sew to the eave of the tent, and tack the seam with a 1-inch tack.
- k. Sew a second seam 1/4 inch from the first one. Tack the seam at the beginning and at the end.
- l. Repeat steps 7 through 11 above to sew the other side of the zipper in place.

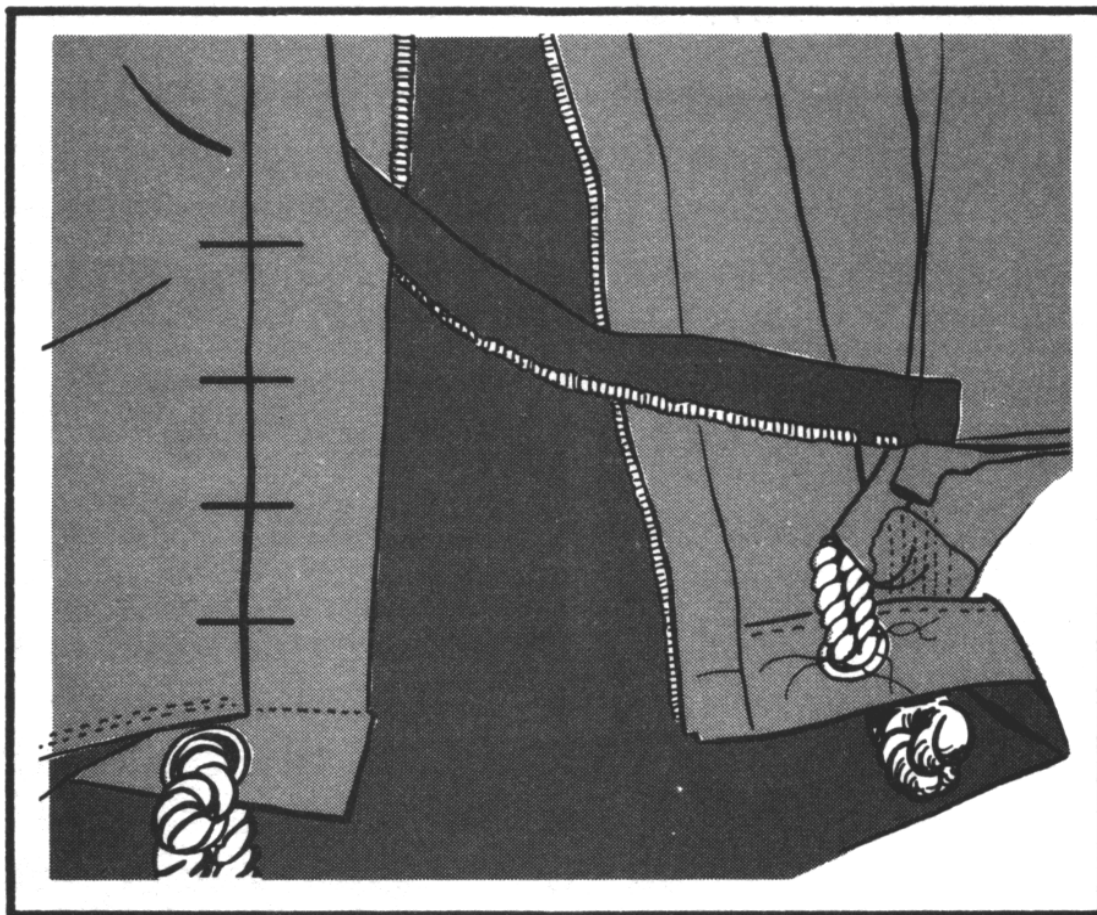


Figure 9-20. Index marks for positioning new zipper

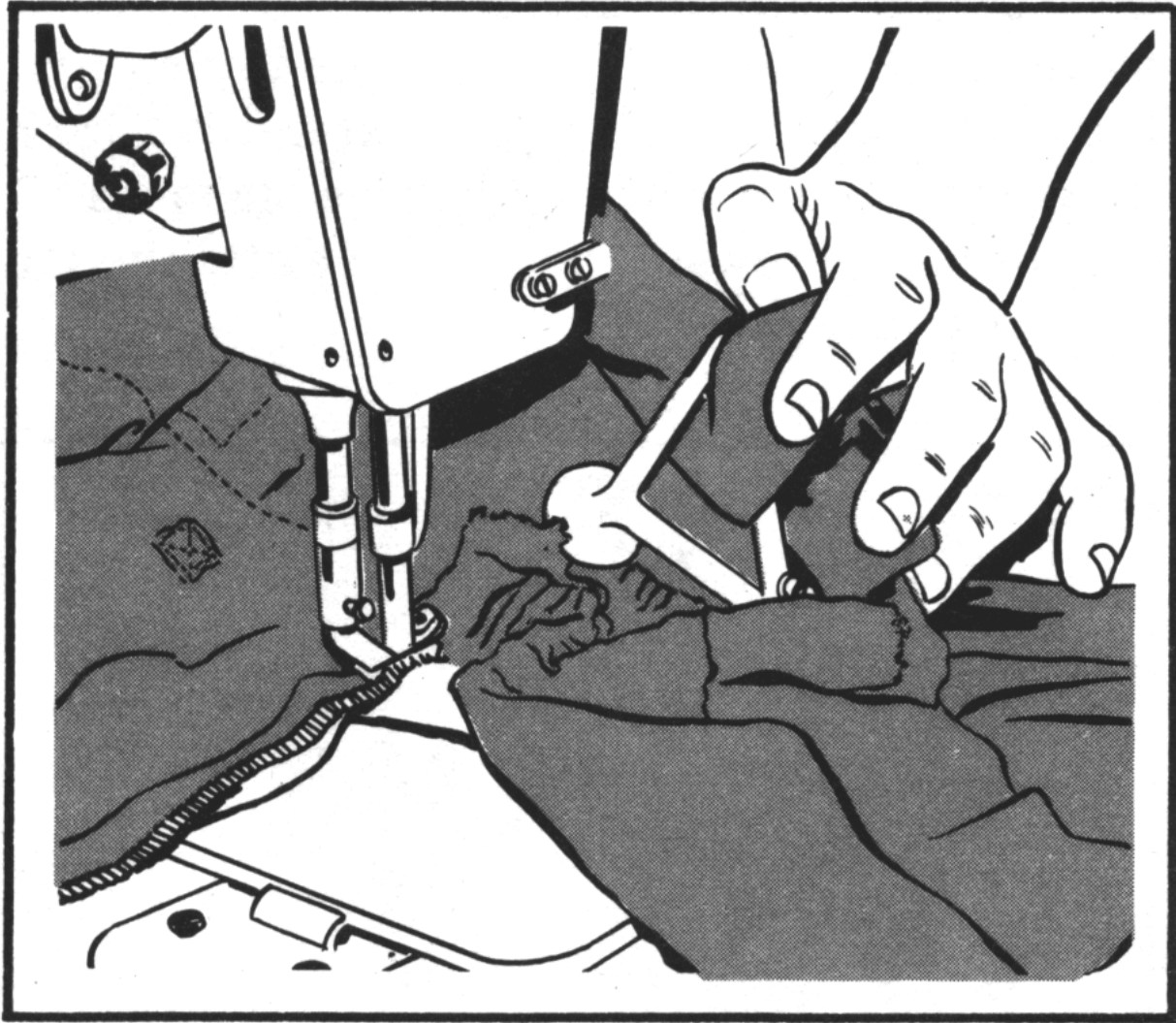


Figure 9-21. Sewing new zipper in place